

## SEQUENCE LISTING

<110> HENRY, JAMES  
CAHILL, CATHERINE  
YASHPAL, KIRAN

<120> APPLICATION OF ANTI-SENSE OLIGONUCLEOTIDES AND  
THERAPEUTIC USES THEREOF

<130> 39245-173913

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<150> 60/226,086

<151> 2000-08-18

<160> 59

<170> PatentIn Ver. 2.1

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<212> PRT

<213> Homo sapiens

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Val	Leu	Trp	Ala	Ala	Ala	Tyr	Thr	Val	Ile	Val	Val	Thr	Ser	Val	Val	35	40	45	
Gly	Asn	Val	Val	Val	Met	Trp	Ile	Ile	Leu	Ala	His	Lys	Arg	Met	Arg	50	55	60	
Thr	Val	Thr	Asn	Tyr	Phe	Leu	Val	Asn	Leu	Ala	Phe	Ala	Glu	Ala	Ser	65	70	75	80
Met	Ala	Ala	Phe	Asn	Thr	Val	Val	Asn	Phe	Thr	Tyr	Ala	Val	His	Asn	85	90	95	
Glu	Trp	Tyr	Tyr	Gly	Leu	Phe	Tyr	Cys	Lys	Phe	His	Asn	Phe	Phe	Pro	100	105	110	
Ile	Ala	Ala	Val	Phe	Ala	Ser	Ile	Tyr	Ser	Met	Thr	Ala	Val	Ala	Phe	115	120	125	
Asp	Arg	Tyr	Met	Ala	Ile	Ile	His	Pro	Leu	Gln	Pro	Arg	Leu	Ser	Ala	130	135	140	
Thr	Ala	Thr	Lys	Val	Val	Ile	Cys	Val	Ile	Trp	Val	Leu	Ala	Leu	Leu	145	150	155	160

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 Phe Ala Ile Cys Trp Leu Pro Phe His Ile Phe Phe Leu Leu Pro Tyr  
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 Ile Asn Pro Asp Leu Tyr Leu Lys Lys Phe Ile Gln Gln Val Tyr Leu  
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      20          25          30

Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val
      35          40          45

Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg
      50          55          60

Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser
      65          70          75          80

Met Ala Ala Phe Asn Thr Val Val Asn Phe Thr Tyr Ala Val His Asn
      85          90          95

Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro
      100          105          110

Ile Ala Ala Val Phe Ala Ser Ile Tyr Ser Met Thr Ala Val Ala Phe
      115          120          125

Asp Arg Tyr Met Ala Ile Ile His Pro Leu Gln Pro Arg Leu Ser Ala
      130          135          140

Thr Ala Thr Lys Val Val Ile Cys Val Ile Trp Val Leu Ala Leu Leu
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Leu Ala Phe Pro Gln Gly Tyr Tyr Ser Thr Thr Glu Thr Met Pro Ser
      165          170          175

Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr
      180          185          190

Glu Lys Val Tyr His Ile Cys Val Thr Val Leu Ile Tyr Phe Leu Pro
      195          200          205

Leu Leu Val Ile Gly Tyr Ala Tyr Thr Val Val Gly Ile Thr Leu Trp
      210          215          220

Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val
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Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr
      245          250          255

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Ile Asn Pro Asp Leu Tyr Leu Lys Lys Phe Ile Gln Gln Val Tyr Leu  
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Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val  
 35 40 45

Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg  
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 Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser  
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 Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro  
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 Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr  
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 Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val  
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 Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr  
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 Phe Ala Ile Cys Trp Leu Pro Phe His Ile Phe Phe Leu Leu Pro Tyr  
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 Ala Ile Met Trp Leu Ala Met Ser Ser Thr Met Tyr Asn Pro Ile Ile  
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      20          25          30

Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val
      35          40          45

Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg
      50          55          60

Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser
      65          70          75          80

Met Ala Ala Phe Asn Thr Val Val Asn Phe Thr Tyr Ala Val His Asn
      85          90          95

Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro
      100          105          110

Ile Ala Ala Cys Phe Ala Ser Ile Tyr Ser Met Thr Ala Val Ala Phe
      115          120          125

Asp Arg Tyr Met Ala Ile Ile His Pro Leu Gln Pro Arg Leu Ser Ala
      130          135          140

Thr Ala Thr Lys Val Val Ile Cys Val Ile Trp Val Leu Ala Leu Leu
      145          150          155          160

Leu Ala Phe Pro Gln Gly Tyr Tyr Ser Thr Thr Glu Thr Met Pro Ser
      165          170          175

Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr
      180          185          190

Glu Lys Val Tyr His Ile Cys Val Thr Val Leu Ile Tyr Phe Leu Pro
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Leu Leu Val Ile Gly Tyr Ala Tyr Thr Ile Val Gly Ile Thr Leu Trp
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Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val
      225          230          235          240

Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr
      245          250          255

Phe Ala Ile Cys Trp Leu Pro Phe His Ile Phe Phe Leu Leu Pro Tyr
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Ile Asn Pro Asp Leu Tyr Leu Lys Lys Phe Ile Gln Gln Val Tyr Leu
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Ala Ile Met Trp Leu Ala Met Ser Ser Thr Met Tyr Asn Pro Ile Ile
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Lys Ser Thr Arg Tyr Leu Gln Thr Gln Gly Ser Val Tyr Lys Val Ser  
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Arg Leu Glu Thr Thr Ile Ser Thr Val Val Gly Ala His Glu Glu Glu  
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Pro Glu Asp Gly Pro Lys Ala Thr Pro Ser Ser Leu Asp Leu Thr Ser  
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Asn Cys Ser Ser Arg Ser Asp Ser Lys Thr Met Thr Glu Ser Phe Ser  
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Phe Ser Ser Asn Val Leu Ser  
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